



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,274	07/08/2004	Brent Brower	71533-0018	5226
20915	7590	03/17/2010		
MCGARRY BAIR PC 32 Market Ave. SW SUITE 500 GRAND RAPIDS, MI 49503			EXAMINER MCGRAW, TREVOR EDWIN	
			ART UNIT 3752	PAPER NUMBER
			NOTIFICATION DATE 03/17/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@mcgarrybair.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,274	<b>Applicant(s)</b> BROWER ET AL.	
	<b>Examiner</b> Trevor E. McGraw	<b>Art Unit</b> 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goetzke et al (US 5,328,094).

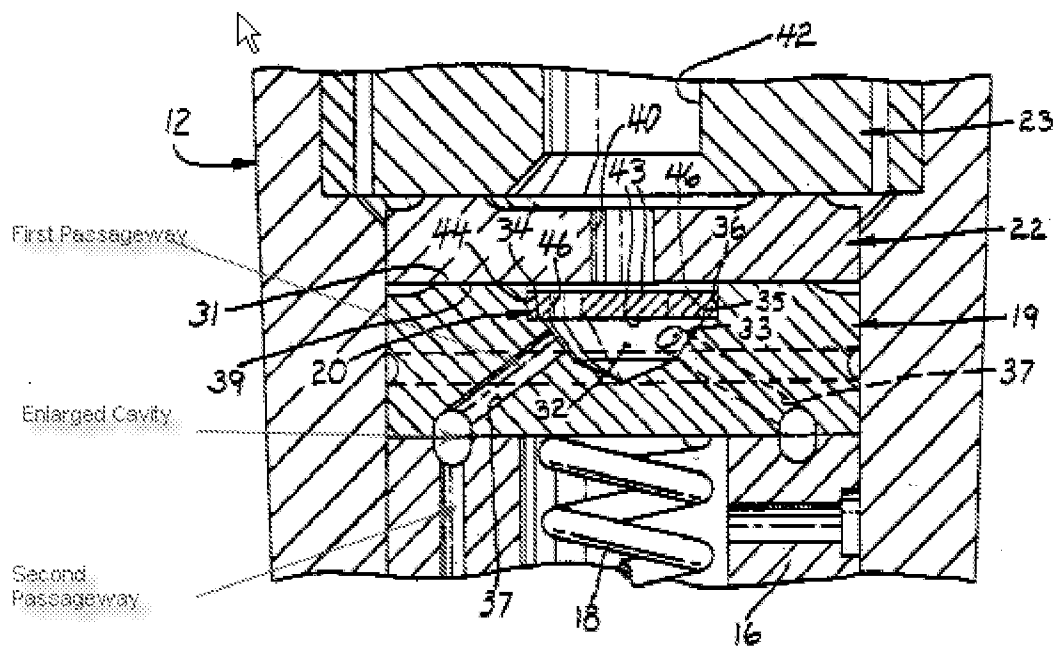
In regard to Claims 1, 9 and 14, Goetzke et al teach a fuel distribution system for an internal combustion engine having a pump (27), an injector (10), a fuel conduit (37) in a body (11), fluidly connecting the pump (27) to the injector (10), the fuel conduit (37) is adapted for delivery of fuel at high pressure, having a first passageway (37) with a first longitudinal axis (axis of "37") and a second passageway (passageway of "16") with a second longitudinal axis (axis in passage of "16") wherein the first and second longitudinal axes intersect at an angle other than 180 degrees and an enlarged cavity (see cavity at intersection between "37" and the passageway of "16" in Figure 2) has a center point at an intersection of the first and second longitudinal axes.

Although Goetzke et al substantially teaches the present invention it fails to teach where the fuel injector is made of a one-piece body.

Art Unit: 3752

However, it would have been obvious to one having ordinary skill in the art at the time the present invention was made to have made the fuel injector body of Goetzke into a single one piece body unit, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art and Applicant does not further provide any benefit for having a one-piece body as a criticality for the present invention.

In regard to Claims 2-5, 10-13 and 15-19, Goetzke et al also teach where the enlarged cavity is generally spherically shaped, the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways where the angle is about ("about" is viewed as a broad term) 90 degrees and the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.



Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rix et al (US 5,192,026) in view of Shade et al (US 3,006,556).

In regard to Claim 6, Rix et al teach a method of manufacturing a one-piece body having a conduit with a first passageway having a first longitudinal axis and a second passageway having a second longitudinal axis wherein the first and second longitudinal axes intersect at an angle other than 180 degrees, and an enlarged cavity having a center point at the intersection of the first and second longitudinal axes, comprising the step of utilizing electrochemical machining to remove material from the walls of the first and second passageways adjacent the intersection of the first and second longitudinal axes until the enlarged cavity with a center point at the intersection is formed (see column 2, lines 1-21).

Although Rix et al substantially teach the present invention (Examiner notes that Rix et al does have conduits that intersect, however Rix et al. is silent to how the conduits are formed in the fuel injector body.) with the exception of drilling the first passageway into the body along a first longitudinal axis and drilling a second passageway into the body along the second longitudinal axis until the second longitudinal axis intersects the first longitudinal axis.

However, Shade et al teach where first and second passageways having first and second longitudinal axes are formed by drilling into a fuel injector body.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the present invention was made to have formed the first and second

Art Unit: 3752

passageways of Rix et al with the drilling process taught by Shade et al in order to provide a manner in which the two passageways can be angled more obliquely.

In regard to Claims 7 and 8, the combined device of Rix et al in view of Shade et al teach a method of manufacturing where the step of electrochemical machining includes removing material substantially evenly in all directions to form a substantially spherical cavity and where removing material in all directions until the diameter of the cavity is twice the diameter of the one of the first and second passageways (see column 2, lines 1-21; emphasis on lines 17-21 in regard to increasing the diameter where the radius of the intersecting walls can be increased as desired by a user.).

### ***Response to Arguments***

#### **Rejection under 35 USC § 103**

Applicant's arguments filed 10/30/2009 have been fully considered but they are not persuasive. Examiner cannot agree with Applicant's assertions that making separate two or three piece parts integral into a single piece is not obvious. Making parts integral to avoid gaps in space and the like is clearly within the level of one having ordinary skill and does not argue persuasive enough to show that it is not within the level of one having ordinary skill to make pieces that are separate into a one-piece body. Examiner also contends that the intersection of Goetzke conduits is at the center point of the enlarged cavity and did not agree with applicant during the interview.

Art Unit: 3752

Examiner agreed that there were two pieces and that it was obvious to make two pieces one piece to one having ordinary skill as doing so involves routine skill in the art. It can be clearly shown that the intersection points of the conduits in the cavity does in fact have an intersection point within the cavity and angles other than 90 and 180 degrees. The cavity is as shown at least generally spherical in the Figure above. Examiner suggests better reciting the claimed invention in a manner that better captures the inventive features so that the inventive concept is evident.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./  
Examiner, Art Unit 3752

/Len Tran/  
Supervisory Patent Examiner, Art Unit 3752